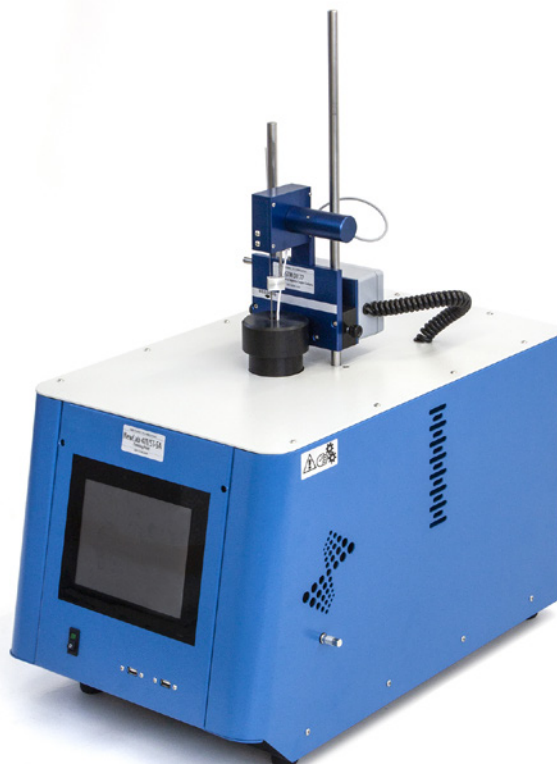




# NewLab 411 ST Freezing Point



## ASTM D1177

Freezing Point of engine coolants, antifreeze products.

### Measuring Freezing Point Principle

According to the methods, the sample is cooled down and stirred. The solid hydrocarbon crystals formation are detected by means of a light beam through fiber optic reflected thanks to a mirror. As soon as crystals are detected, the sample is warmed up until their complete disappearance.

### Measuring Freezing Point Devices

- Light pulsed emission on I.R spectrum through a coaxial fiber optic
- Coaxial fiber optic equipped with a mirror

### Measuring Temperature Probe

- Platinum resistance PT100 class A

### Stirrer

- A micro-motor drives all the mechanical system
- 3 coils stirrer made of brass

### Measuring Parameters

- Temperatures: in °C / °F
- Measuring range: +80°C up to -100°C
- Resolution: 0.01 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

### Software Features

- User friendly interface
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Results report
- Printable graphs and results - any Windows® compatible printer can be used

The software includes:

#### Analysis Menu

- Standard method as per ASTM norm of reference
- Optional methods:
  - special detection of contaminants
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions

#### Diagnostic Menu

- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / °F / Volt

#### Calibration Menu

- Automatic calibration of each temperature probe
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes up to 100 calibration points

#### Data Utilities

- Fields for operator and product name
- Archive viewer for files recall
- All analysis stored in Excel® compatible format and JPG image
- Storage capacity for more than 60'000 analysis
- LIMS compatible

### Integrated Touch Screen Panel PC

- TFT/LCD 8"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC

### Test Jar

- Same dimensions and volume as described by the standard test method ASTM D1177
- Small edge on the top in order to fix the glass cell to the analytical head

### Cooling System

- Insulated cooling jackets
- Integrated gas CFC/HCFC free liquid helium motor compressor
- Equipped with an automatic energy power save system

### Safety Devices

- Pressure controller
- Thermostat and thermo-switch

### Electrical Supply

- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

### Cord Cable:

- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat

### Ambient Temperature

- Max 32 °C
- H.R. 80%

### Dimensions and weight

- Width: 34 cm
- Depth: 60 cm
- Height: 80 cm
- Weight: 34 kg

### Spare Parts

- LAB-102-381: double tube
- LAB-102-382: wire stirrer
- LAB-400/008-04: PT100 Product with connector
- LAB-400/008-07: fibre optic
- LAB-400/008-08: mirror

### Calibration Tools

- OilLab 80: calibration decade box – PT100 simulator
- OilLab 81: set of connectors and cables for cold range